

Immersion Liquid Cooling for 4U Switches in Smart Buildings



AI Overview

Immersion liquid cooling for 4U switches offers high-efficiency thermal management, reduced energy consumption, and compact deployment for smart building edge data centers. Overview of 4U Immersion Cooling Immersion cooling involves submerging electronic components, such as 4U switches or servers, in a dielectric coolant that efficiently absorbs heat. This method directly removes heat from high-power components, such as ASICs and GPUs, without relying on traditional air cooling, which is often insufficient for high-density deployments in smart buildings. Key Benefits

1. Enhanced Thermal Efficiency: Immersion cooling systems, like LiquidStack's DataTank 4U, can handle extreme thermal loads while maintaining uniform temperature distribution, preventing hotspots and throttling. Intel's 4U WAIC kit supports up to 10 kW per tank, demonstrating the capability to cool high-performance switches in compact form factors.
2. Energy Savings: Direct-to-chip and immersion cooling can reduce energy consumption by 30-50% compared to air cooling, lowering operational costs and supporting green building initiatives. Reduced fan usage also decreases noise levels, which is beneficial in smart building environments.
3. Space Optimization: Compact 4U immersion tanks allow denser rack deployments, freeing up valuable floor space in edge or micro data centers. This is particularly important in smart buildings where space is limited.
4. Reliability and Maintenance: Modern immersion systems integrate Cooling Distribution Units (CDUs), redundant pumps, and monitoring systems, ensuring high reliability and easy maintenance without frequent component swaps. Flip-up sealed tank designs prevent coolant evaporation and corrosion, enhancing longevity.
5. Sustainability: Immersion cooling minimizes water usage, allows heat recycling for building heating...

Article Content

Exploring the Future of AI Networking: Liquid-Cooled Switches ...

Cisco is actively innovating in direct-to-chip liquid cooling for high-performance switches, laying the groundwork for solutions that will enable seamless and scalable AI at unprecedented densities.

Datacenters that make sense | Liquid Cooling at Scale

Company specializing in immersion liquid cooling solutions for data centers. We create liquid-cooled datacenters that scale smarter, run cleaner and cost less.

Data Center Liquid Cooling Guide: How to Choose the Right Solution

A practical, no-fluff guide to data center liquid cooling—covering real-world trade-offs, cost drivers, and when direct-to-chip or immersion makes sense for your infrastructure.

Intel's Open IP Immersion Cooling Reference Solutions - Single

Intel has already introduced the 2U/4U Air Assisted Immersion Cooling (AAIC) for Intel's Open IP Immersion Cooling. This AAIC is a stand-alone system and easy to deploy in any kind of

Intel s Open IP Immersion Cooling Reference Solutions Single Phase

Intel's 4U Deployment Kit, also called 4U WAIC (Water Assisted Immersion Cooling), integrates the tank, the Cooling Distribution Unit (CDU), and the monitoring system.

A review of the immersion liquid cooling technology for high ...

This paper provides a comprehensive analysis of ILC technology, examining coolant classification and selection criteria, the operating principles and performance of various liquid-cooling

Datacenter Anatomy Part 2 - Cooling Systems

In the second part of this series exploring Datacenter infrastructure and technologies, we'll focus on Cooling Systems. Nvidia shook the entire

Intel's Open IP Immersion Cooling Reference Solutions - Single

Description Intel's Open IP Immersion Cooling Reference Solutions - Single Phase - 4U - User Guide

Liquid Cooling for Edge and Micro Data Centers

Revolutionise your data centre's cooling with the DataTank™ 4U. Find out how our compact immersion cooling systems can optimise efficiency and save space!

BT to test liquid cooling, including a Juniper/Iceotope

BT is testing liquid cooling techniques including network switches provided by Iceotope and Juniper, and new immersion players. The tests include

Technical Documents on Liquid Cooling Solutions

Explore our extensive range of technical documents on liquid cooling solutions for data centres. Read now to elevate your understanding of our products!

Immersion liquid cooling for electronics: Materials, systems ...

The current work systematically reviews the research progress on immersion cooling technology in electronic device thermal management, including the properties of immersion coolants,

The immersion cooling technology: Current and future development in ...

In more detail, this paper comprehensively compiles the latest findings of immersion cooling technology which includes an overview of the cooling system, history, implementation,

Two Phase Immersion Cooling Solution | LiquidStack

LiquidStack, a leading direct-to-chip liquid cooling company, provides next-generation single and two phase immersion cooling solutions, including

Intel's Open IP Immersion Cooling Reference Solutions Single Phase

Intel has already introduced the 4U Deployment Kit for Intel's Open IP Immersion Cooling server in-tank design, in-lab validation, and field issue debug. This 4U Deployment Kit with a 10-kW cooling

Towards energy-efficient data centers: A comprehensive review of ...

Immersion liquid cooling meets the cooling needs of high-density DCs. Lionello et al. derived a control-oriented model of an immersion cooling system that significantly reduces the

LA Cooling Guide: How to Choose the Right Solution

A practical, non-promotional guide comparing personal cooling aids and liquid cooling systems for tech—based on real 2026 usage patterns, cost drivers, and regional needs in Los Angeles.

Shopping

Shopping is a leading price comparison site that allows you shop online for the best deals and lowest prices. You can read unbiased product reviews and

Immersion and liquid cooling for AI data centers | NorthC

AI workloads and HPC require efficient cooling. Discover how immersion and liquid cooling save energy, enhance performance, and future-proof data centers.

Exploring the Future of AI Networking: Liquid-Cooled Switches on the ...

Imagine a data center where even the most powerful switches run cool and stable—without noise, thermal throttling, or energy waste. Cisco is actively innovating in direct-to-chip

Intel's Open IP Immersion Cooling Reference Solutions - Single

Intel's user guide for single-phase immersion cooling solutions provides detailed instructions and information for effective implementation in 4U systems.

Immersion cooling for computer components | Submer

Immersion cooling is a technique for cooling IT equipment that involves submerging the computer components in a thermally conductive and dielectric liquid. With

Product Brief

Intel's Open IP Immersion Cooling - Single Phase - 4U Intel has also introduced a Server Deployment Kit for Intel's Open IP Immersion Cooling server in-tank design, in-lab validation, and field issue

Contact Us

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